

Claims:

1. A depositing device for depositing flowable food containing gas comprising

5 a pressurized feed line conveying flowable food containing gas under pressure into the food;

piston means operatively connected to the feed line comprising a piston and a chamber;

10 an outlet to deliver food at the atmospheric pressure into moulds;

characterized in that it comprises:

a pressure retaining means arranged to retain the product in the chamber at the same pressure as the line pressure and deliver the product through the outlet as
15 pressure in the chamber increases from the line pressure upon descent of the piston in the chamber.

2. Depositing device according to claim 1, wherein the pressure retaining means is a pressure actuated valve
20 arranged at the outlet.

3. Depositing device according to claim 1, wherein the pressure actuated valve is a spring-loaded nozzle.

25 4. Depositing device according to claim 2 or 3, wherein the valve is calibrated to open at a pressure of more than 0.5 bar above the line pressure.

5. Depositing device according to any of the preceding
30 claims, wherein the line pressure is comprised between 2 to 30 bars.

6. Depositing device according to any of the preceding claims, wherein a valve means is arranged between the
35 feed line and chamber which operates between an opening

position wherein the chamber is filled with flowable food and a closed position wherein the chamber is isolated from the feed line.

5 7. Depositing device according to claim 6, wherein the valve at the feed line has a rotary valve bar comprising at least one passage upon rotation of the valve at a coinciding position between the feed line and the chamber and has a sealing surface extending along an angular path
10 of at least 130 degrees, preferably of 180 degrees.

8. Depositing device according to claim 1, wherein the outlet has a spreading configuration with a flared and/or
15 splitting zones that splits the stream into a plurality of streams to aid distribution in wide cavities.

9. Depositing device according to claim 1, wherein the piston is driven under servo control to break down its stroke under multiple steps to deliver discrete volumes
20 of product at high speed.

10. A device for producing food containing gaseous bubbles from a pumpable product comprising:

25 a plurality of depositing devices as any ones of the preceding claims,

a feed line for conveying the pumpable product to the depositing devices,

pump means for providing speed to the pumpable product through the feed line,

30 a source of gas for incorporating gas into the pumpable product and connected to the feed line,

the pump means being arranged to draw off gas from the gas source and control gas intake into the feed line by the control of the speed of the pump means.

11. A device according to claim 10, wherein the pump means comprises a first and second pumps arranged in series along a portion of line of the feed line and
5 wherein the second pump is driven at a speed higher than the speed of the first pump thereby incorporating gas into said portion of line by the effect of suction created by this speed difference.

10 12. A device according to claim 11, wherein the line pressure is generated entirely by the first pump.

13. A device according to claim 12, wherein the line pressure is substantially constant from the exit of the
15 first pump to the depositing devices.

14. A device according to claim 13, wherein the control the gas intake into the pumpable product is made by controlling the speed of the second pump relative to the
20 speed of the first pump.

15. A device according to claim 14, wherein the ratio of the speed of the first pump to the speed of the second pump is controlled within a ratio ranging of from 1:1.1
25 to 1:2.

16. A device according to claim 15, wherein the pressure is controlled by a pressure transducer that controls a pressure retaining valve for removing excess of product
30 from the discharge means.

17. A device according to any ones of claims 10 to 16, wherein the first and second pumps are gear pumps, vane pumps or screw pumps.

18. A method for aerating and depositing an aerated food comprising

pumping the food from a source of liquefied food,

5 adding gas from a source of gas in controlled amounts in the liquefied food to produce a gasified food;

maintaining a constant pressure of the gasified food up to depositing means including retaining means which retain the product at said pressure before the depositing
10 point to prevent the product from expanding;

depositing amounts of the gasified food by forcing the product through the depositing point.

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